Bill 25, CD1
Additional Testimony

HAWAII LABORERS-EMPLOYERS COOPERATION AND EDUCATION TRUST
650 Iwilei Road, Suite 285 · Honolulu, HI 96817 · Phone: 808-845-3238 · Fax: 808-845-8300

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August 30, 2019

HONOLULU CITY COUNCIL
City Council Chamber
Honolulu, Hawaii 96813
DATE: Wednesday, September 4, 2019
TIME: 10:00 a.m.

TESTIMONY ON BILL NO. 25 CD1 (2019) – Relating to the Adoption of the State Energy Code

To Council Chair Anderson, Vice Chair Kobayashi and members of the City Council:

Hawaii LECET is a labor-management partnership between the Hawaii Laborers' International Union of North America, Local 368, its' 5000+ members and its' 250+ unionized contractors. The Laborers' International Union of North America is the largest construction union in the United States.

Mahalo for the opportunity to testify in **SUPPORT of Bill No. 25 CD1**, Relating to the Adoption of the State Energy Code. Hawaii LECET supports the intent of Bill No. 25 CD1 and would like to request amendments as shown on page 2 in our testimony, to include concrete masonry and concrete walls in the building code to improve on the standpoints of energy efficiency and fire safety. Hawaii LECET would like to ensure that the sustainability and safety benefits of mass wall construction are recognized in the revisions of the State Building Codes, as these revisions will help to create codes that are tailored to Hawaii's unique climate, resulting in greater energy efficiency and cost savings.

Mahalo for the opportunity to testify.

With respect,

Hawaii Laborers-Employers Cooperation & Education Trust

C402.2.3 Thermal resistance of above-grade walls. The minimum R-value of materials installed in the wall cavity between framing members and continuously on the wall shall be as specified in Table C402.1.3, based on framing type and construction materials used in the wall assembly.

wood framed, metal framed, and mass walls

Exception: Continuous insulation for ~~wood and metal framed walls~~ are not required when one of the following conditions are met:

1. Walls have a covering with a reflectance of equal to or greater than 0.64 and/or overhangs with a projection factor equal to or greater than 0.3;

2. Walls have overhangs with a projection factor equal to or greater than 0.3. The projection factor is the horizontal distance from the surface of the wall to the farthest most point of the overhang divided by the vertical distance from the first floor level to the bottom-most point of the overhang; or

3. Concrete, concrete masonry units (CMU), and similar mass walls are six inches or greater in thickness.

The R-value of integral insulation installed in CMUs shall not be used in determining compliance with Table C402.1.3. Mass walls shall include walls:

1. Weighing not less than 35 psf (170 kg/m^2) of wall surface area.

2. Weighing not less than 25 psf (120 kg/m^2) of wall surface area where the material weight is not more than 120 psf (1900 kg/m^3).

3. Having a heat capacity exceeding 7 Btu/ft^2°F (144 kJ ~~cage~~/m^2 • K).

4. Having a heat capacity exceeding 5 Btu/ft^2°F (103 kJ/m^2• K), where the material weight is not more than 120 pcf (1900 kg/m^3).

~~**Exception:** Concrete, CMU, and similar mass walls are six inches or greater in thickness.~~

Castle & Cooke
Hawai'i

680 Iwilei Road, Suite 510
Honolulu, Hawai'i 96817
(808) 548-4811 • Fax (808) 548-2980

Harry A. Saunders
President

Fax Submittal: 808-768-3826
Email Submittal: Honolulu.gov/ccl-testimony-form.html

TESTIMONY TO THE HONOLULU CITY COUNCIL
CITY AND COUNTY OF HONOLULU

Before the Zoning, Planning and Housing Committee / Public Hearing

September 4, 2019; 10:00a.m. Honolulu Hale

In Opposition of Bill 25
Relating to the Adoption of the State Energy Conservation Code

Dear Chair Ron Menor, Vice Chair Tommy Waters and Honorable Council Members:

Castle & Cooke Homes Hawaii, Inc. is in opposition to the following changes in the proposed Energy Conservation Code which increases the already high cost of housing. We have estimated that Bill 25, which addressed only two (2) of the Energy Code changes relating to water heating and electric vehicles will add a minimum of $41 million to the cost of homes at Koa Ridge. While the goal of addressing State Energy Conservation is admirable, it should not be placed solely on the back of our local homebuyers.

Water Heating: The proposed amendment effectively eliminates instant gas water heaters, which are an efficient and reliable means of heating water. The cost difference between instant gas water heating vs. solar water heating is approximately $10,000 per home. This cost will be passed on to the home buyer. Furthermore, all solar water systems have an electric back up heating element This means that HECO has to size their generation and distribution systems to accommodate this load. Eliminating gas heaters also reduces the incentive for developers to offer gas ranges and other appliances, meaning that these loads will have to be accounted for as well.

Electric Vehicle Capability: Most affordable housing projects,particularly at the lowest end are multi-family. The proposed amendment requires 25% of multi-family parking to be "electric vehicle ready" at a cost of $11,300 per EV ready stall. While the implementation and operation of such a plan will be difficult and time consuming, it is highly questionable that providng 25% of the parking stalls to address less than 1% of the vehicles on Oahu will actually result in energy savings. We do know that such a 25% mandate will require max capacity planning for us and HECO resulting in

increased transformer capacity for the projects and the entire community resulting in higher development costs to be passed on to all home buyers.

Other Code Changes: The code changes also increase costs in other areas, which the City is not addressing. Homes will have to be built air tight and blower door tested, new ventilation requirements will require additional fans; changes to the window solar heat gain coefficients will increase the cost of windows and additional insulation over steel framing will add material and labor costs. These changes will add another **$41 million dollars** to the cost of homes at Koa Ridge

Therefore, the total impact will be **$82 million**, all of which must be passed on to the home buyer at an average of **$26,600 per single family home** and **$21,700 per multi-family/affordable unit.**

We question the necessity of making policy that significantly increases the cost of housing in the middle of a housing crisis.

We request that Bill 25 be held and that a working group including the impacted trades, builders, developers, and the appropriate City Departments be formed to address the goals of this bill in a more affordable, practical and consumer friendly manner.

Sincerely,
CASTLE & COOKE HAWAII, INC.

Harry Saunders
President

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HAWAII TEAMSTERS & ALLIED WORKERS LOCAL 996

Affiliated with the International Brotherhood of Teamsters
Local996@hawaiiteamsters.com
1817 Hart Street
Honolulu. HI 96819-3205
Telephone: (808) 847-6633
Fax: (808) 842-4575

Meeting Date: **Septemeber 4, 2019**

Agenda Item: **Bill 25 CD1 (2019)**

Position: **OPPOSE**

Chair Anderson, Vice Chair Kobayashi and members of the Honolulu City Council,

Hawaii Teamsters and Allied Workers Local 996 stand **OPPOSED** to Bill 25, relating to the adoption of the state energy conservation code, in its current form and supports the CD1 amendment which would exclude the provision for solar water heaters.

We object to the provisions of Bill 25, that require homes to be built with solar water heaters, taking away homeowners' options to use more economical gas water heaters.

This blanket ordinance impacts the construction for 25,000 residents who need affordable housing. Proponents will say that the costs for solar can be borne by the homeowner. The unfortunate truth is the people most hurt by this ordinance will be low- and moderate-income residents attempting to purchase a home. The cost difference between a solar water heater and an instantaneous gas water heater can be $7,000. For a family of 4 making the area median income of $85,000 that cost alone could be the difference between qualifying for a mortgage or not.

Our members and other consumers deserve a clear choice on how their homes are heated, when it comes savings, and resiliency. Please take into consideration emergency preparedness, in the wake of natural disasters. The Hawaii Emergency Management Agency estimates the loss of power during a civil emergency could last 14 days or more. Gas-powered water heaters and stoves would be the only available source of heating until power is restored. Gas lines are underground and are less susceptible to inclement weather.

HAWAII TEAMSTERS & ALLIED WORKERS LOCAL 996

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One example of the benefit of gas utility customers is in Kaua'i. Residents in Hanalei, Wainiha, and Haena faced some of the worst flooding in history when 50 inches of rain fell in a 24 hour period in 2018. HG customers with gas powered water heaters, and stoves still had access to hot water and able to cook in their homes without power.

Our last concern is the 90 days in which this bill will be implemented. The utility has been, and is expected to be expanding their renewable energy portfolio. It would be unreasonable to expect the utility to invest its resources into newer more expensive technology and at the same time capping 20% of their income.

We need to diversify our energy supply and eliminating gas as an energy source is counterproductive. It also puts our economy in jeopardy and risks the livelihood hood of good Teamster jobs for 225 employees on Oahu.

The citizens, our members, and your constituents deserve the option and look forward to your leadership in weighing these factors.

Mahalo for the opportunity to testify

Cody Sula

Government Affairs Liaison

Hawaii Teamsters and Allied Workers, Local 996

SIERRA CLUB OF HAWAI'I
O'AHU GROUP

HONOLULU CITY COUNCIL HEARING
Wednesday, September 4th at 9:00 AM

Support for Bill 25 (2019)- RELATING TO THE ADOPTION OF THE STATE ENERGY CONSERVATION CODE

Aloha Chair Anderson and members of the Honolulu City Council,

On behalf of the Sierra Club O'ahu Group and our 8,000 members and supporters, we are in strong support of Bill 25 (2019), which would update building codes to meet today's urgent goals toward carbon neutrality. The city is in a unique position to be a model for necessary immediate action addressing the climate crisis. . The world's top scientists repeatedly say that humans must make massive shifts in their behavior to prevent the planet from warming more than 1.5 degrees by 2030.[1] The impacts of this temperature increase are catastrophic to people and the environment. Locally, University of Hawai'i climate scientist Camilo Mora shared, "studies at the University of Hawai'i suggests that unprecedented climatic changes will be common in the state by the 2030s."[2] The time to develop and implement strategies to make Hawai'i more resilient is fixed. Studies show that the longer climate action is put off, the more it will cost to adapt and mitigate. In this context, we support the intentions of Bill 25 (2019) and urge the council to adopt this bill.

We thank the City Council for enacting a solution-oriented policy that prioritizes the health and wellbeing of the environment and people of O'ahu . Bill 25 (2019) demonstrates a cost-effective equitable effort towards energy conservation with flexible options that reduce construction costs, make compliance easier, and provide long-term savings for residents.

There are two points to this bill that make a particularly balanced transition to a reduced carbon future. Beginning with the language in the bill for Electric Vehicle readiness-- EV-ready building codes are one of the most effective and low-cost strategies for local governments to encourage consumers to buy or lease electric vehicles in a growing market. These codes establish EV infrastructure requirements for new construction projects, including the electrical capacity and pre-wiring to make possible the future installation of EV charging stations which can save consumers thousands in installation costs. Studies have shown that installing EV-ready charging infrastructure is significantly less expensive during new construction than it is for retrofits. These cost savings are achieved through improved construction management and ultimately benefit builders and consumers.

It is in the spirit of working towards future EV adoption that we recommend an amendment in regards to EV charging levels. At this time, the 25% designation is too modest of a number when the trend of EV sales in the U.S and in Hawai'i are growing exponentially each year. It is within the interest of the city to fully commit to this measure and mandate 100% of parking stalls have EV-ready wiring. Approving a

[1] World Resources Institute https://www.wri.org/blog/2018/10/8-things-you-need-know-about-ipcc-15-c-report
[2]https://www.civilbeat.org/2019/01/hawaii-2040-climate-change-is-already-here-and-were-running-out-of-time/

progressive amendment will cut retrofit costs and save costs during construction because the price per parking space is reduced when done in bulk.[3]

The second part of the bill we'd like to highlight is the solar water heating (SWH) with options. It is recognized that SWH is incredibly efficient and low cost for both home owners and developers in a tropical climate zone. Most of O'ahu can benefit from solar power to make it the most environmentally-friendly option for water heating. If not, Bill 25 is an inclusive measure that allows for flexibility and alternatives. Studies by the Office of Resilience and DBEDT highlight the cost-effectiveness of this measure is to ensure that homeowners are not locked into a water heater option that is not economically favorable. This is especially critical because although climate resiliency is a top priority for the well-being of our island and people, it should not be disproportionately burdensome on local families.

We'd also like to emphasize that we support this bill as intended for *newly-constructed buildings,* likely to be in place for 50 years or more, and don't believe Bill 25 will negatively impact residents or workers if passed. No jobs will be lost. In fact this should be seen as an opportunity to create more green jobs should companies like Hawai'i Gas evolve into providing renewable gas sources to reduce greenhouse gas emissions in our built environment and improve overall affordability for residents.

Sierra Club O'ahu Group joins the City Council in working hard to ensure our city and state fulfill its commitments to the goal of carbon neutrality by 2045. Bill 25 is a critical next step in response to climate change. We are committed to working collaboratively to move forward in creating an equitable transition that achieves the City's long-term climate resilience and sustainability goals. The O'ahu Group looks forward to supporting this bill and this Council by continuing to raise public awareness that the climate change crisis is one of the most immediate threats Hawai'i's future.

Mahalo for the opportunity to support Bill 25 on second reading.

Respectfully,

Lauren Watanabe
Sierra Club O'ahu
Program Manager

[3] "Plug-In Electric Vehicle Infrastructure Cost-Effectiveness Report for San Francisco" and "Southern California Edison 'Charge Ready' Program Advisory Board Meeting #5 (August 2017) – Slide 11"

Testimony of
Pacific Resource Partnership

City & County of Honolulu
City Council
Councilmember Ikaika Anderson, Chair
Councilmember Ann H. Kobayashi, Vice Chair

Bill 25, CD1 – Relating to the adoption of the State Energy Conservation Code
Wednesday, September 4, 2019
10:00 a.m.

Dear Chair Anderson, Vice Chair Kobayashi and Members of the Honolulu City Council:

Pacific Resource Partnership (PRP) appreciates the opportunity to submit further testimony regarding Bill 25 (2019), CD1. After meeting with building industry stakeholders and representatives from Honolulu's Office of Climate Change, Sustainability and Resiliency ("City"), it appears industry stakeholders and the City disagree on what should be quantifiable impacts associated with Bill 25 (2019), CD1 including, but not limited to, increased infrastructure costs, system costs, impact on home prices and the comparative energy efficiencies resulting from the proposed code changes versus alternatives proposed by industry stakeholders. Given the collective inability to quantify the impacts of Bill 25 (2019), CD1 and the significance of this data to prospective home buyers on Oahu, PRP voices **strong concerns** to the passage of this bill on second reading.

In 2015, DBEDT quantified the housing demand in the City and County of Honolulu at an additional 25,847, or 40% of the statewide demand for new housing between 2015 and 2025. In 2017, the ALICE report revealed that 46% of total households in the City and County of Honolulu struggle to make ends meet with a budget that does not allow for savings without sacrificing other necessities, such as childcare, food, healthcare, and transportation. Further, affordable housing and housing affordability are consistently ranked as major concerns for Oahu residents.

Respectfully, PRP suggests this Council insist the City continue to work with industry stakeholders to provide the Council with figures that both sides agree reasonably represent the financial impact to future home buyers on Oahu. Absent said data, this Council should defer passage of Bill 25 (2019), CD1.

Finally, PRP also objects to proposed amended subsection R501.4 on page 16 of Bill 25 (2019), CD1. The provision, as written, is vague as to intent and effect on current homeowners on Oahu

Thank you for this opportunity to submit written testimony.

PRP
PACIFIC RESOURCE PARTNERSHIP

From: CLK Council Info
Sent: Tuesday, September 03, 2019 10:51 PM
Subject: Council/Public Hearing Speaker Registration/Testimony

Speaker Registration/Testimony

Name	Michael H. Noguchi
Phone	(808) 722-3680
Email	mikenoguchi@gmail.com
Meeting Date	09-04-2019
Council/PH Committee	Council
Agenda Item	Bill 25
Your position on the matter	Oppose
Representing	Self
Organization	
Do you wish to speak at the hearing?	No
Written Testimony	Bill 25, currently moving through the City Council, includes a section that would eliminate the choice for residents to use economical and efficient gas-powered water heaters, which can also run on RNG.(renewable natural gas) Hawai'i Gas is currently producing renewable natural gas (RNG) from wastewater at the Honouliuli Wastewater Treatment Plant. In 2010, the state of Hawaii mandated solar water heaters for all new home construction, but also recognized that solar water heaters were not always the best option. As you are well aware, There are times when not all of your constituents are able to enjoy long and consistent days of high sunlight to produce solar energy. Gas is often an option for them. Although, they are not on the SNG pipeline, they do have the ability to utilize propane as their fuel source to make hot water. Many recognize that there cannot be a "one-size fits all" approach to water-heating systems. Bill 25 eliminates options and would in the end, costs consumers more money. (At least $7000.00 more for solar). Gas is a renewable option which provides for the needs of tens of thousands of Hawaii families and businesses. It is the great choice for many because it is affordable and reliable. It is also 30% cleaner than oil and 50% cleaner than coal.

Taking nothing away from the electric company, they do a great job in keeping the lights on when we need it the most. However, I would like to say that Hawai'i Gas have not stopped sending gas to the city. Thankfully the SNG (synthetic natural gas) Plant Has continued to consistently provide gas (in addition to our homeowners,) to our hospitals, universities and schools, hotels, and industrial users even during undesirable weather conditions. The propane division, insured that all of our tanked customers were topped off before the arrival of the storms.

I feel it's important for our residents and businesses to have a dependable source of clean energy to avoid disruption.

Gas is something we can count on, especially in emergency situations. Please allow us the option to choose.

Testimony Attachment	
Accept Terms and Agreement	1

IP: 192.168.200.67

Name: **Caleb Sun**
Meeting Date: **September 4, 2019**
Agenda Item: **Bill 25, CD1 (2019)**
Position: **OPPOSE**

Chair Anderson, Vice-Chair Kobayashi, distinguished members of the Honolulu City Council,

I am testifying **in opposition to the current language of Bill 25 (2019)** relating to the adoption of the state energy conservation code, **specifically as it concerns the solar water heating provision.**

I base my opposition on two reasons: cost and choice.

As a homeowner considering a home renovation in the future, this bill would raise the upfront cost of a renovation by requiring the installation of an expensive solar water heater, which adds to our already high cost of living here in Hawaii. Earlier this year, I considered switching to a solar water heater. I obtained a few quotes, one of which was around $9,000. I submitted a copy of the quote as part of my written testimony. Even with the potential rebates and tax credits, I realized that it would be too costly to pay such a high upfront cost.

In addition to cost, this bill also reduces choices for consumers, who should be trusted to make their own decision about the type of energy that best suits their needs.

Considering the high upfront cost of a solar water heater, a cost that not all residents can afford, this bill would raise the already high cost of maintaining and renovating a home.

I am in complete support of integrating more affordable renewable energy and doing my part to combat climate change. However, we must make sound decisions keeping all of Hawaii's people in mind. In my opinion, Bill 25 in its current form does more damage than good.

Thank you for the opportunity to share my testimony.

[redacted]

Oahu Office [redacted]

Contract

Maui Office [redacted]

HI License # [redacted]

PROPOSAL SUBMITTED TO	PHONE	DATE
[redacted]	[redacted]	[redacted]
STREET	MAILING ADDRESS	
[redacted]		
CITY, STATE and ZIP CODE	EMAIL ADDRESS	
[redacted]	[redacted]	
ARCHITECT, BUILDER, ROOFER, ETC.	TAX MAP KEY	

We hereby submit specifications and estimates for:

(1) 120 gal tank with 6 year warranty
(2) EP-32 Sunearth panels with 10 year warranty
AC pump, timer and all necessary pipe and fittings, including mixing valve
All labor/materials/permits
5 year warranty on materials and workmanship from date of installation
Includes conduit/conducters to new tank location

SYSTEM BASE PRICE	$8,820.00
Sales tax	$415.60
Subtotal	$9,235.60
HEEP rebate	-$750.00
PAYABLE TO [redacted]	**$8,485.60**
Federal tax credit *	-$2,545.68
HI tax credit *	-$2,250.00
System cost after tax credits	**$3,689.92**

* *NOTE:* [redacted] *does not provide or guarantee rebate or tax credits. Consult your tax advisor for eligibility.*

We Propose hereby to furnish material and labor – complete in accordance with above specifications, for the sum of:

dollars **$8,485.60**

Payment to be made as follows:

1/2 down@ **$ 4,242.80** ½ On Completion @ **$ 4,242.80**

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workman's Compensation Insurance.

Authorized Signature (for [redacted]):

Note: This proposal may be withdrawn by [redacted] if not accepted within 15 days.

Acceptance of Proposal – The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Customer's printed name:

Date of Acceptance:

Customer's Approval of Proposal:

Speaker Registration/Testimony

Name	Brian Yee
Phone	8082211118
Email	808mauka2makai@gmail.com
Meeting Date	09-04-2019
Council/PH Committee	Zoning
Agenda Item	Bill 25, CD1 (2019)
Your position on the matter	Oppose
Representing	Self
Organization	
Do you wish to speak at the hearing?	No
Written Testimony	I am opposed to Bill 25. Natural gas is a clean, reliable energy source and passing this bill will make housing less affordable, by adding approximately $30,000.00 to the cost of a home. Some on the City Council and the Mayor's office will say that $30,000.00 is "cheap" and the homeowner should be able to pay for it over a 30 year mortgage. However, for the real working people of Hawaii, $30,000.00 is REAL money and it has caused some Hawaii homeowners to no longer qualify for their construction loan, due to the added cost of solar and the other Bill 25 energy requirements. Keep energy choice as an option and let the people of Honolulu, decide what is best for their particular circumstances.
Testimony Attachment	
Accept Terms and Agreement	1

IP: 192.168.200.67

Speaker Registration/Testimony

Name	Paul Bernstein
Phone	8083737161
Email	PAULBERNSTEIN2004@YAHOO.COM
Meeting Date	09-04-2019
Council/PH Committee	Zoning
Agenda Item	Bill 25 CD1
Your position on the matter	Support
Representing	Self
Organization	
Do you wish to speak at the hearing?	No

Written Testimony

Aloha City Council Members:

I am writing in support of Bill 25. Economists have long recognized the principal-agent problem that constrains incentives for energy-efficiency investments by either landlords or tenants in renter-occupied properties and the need for energy efficiency standards to overcome this market failure. That is, there are instances that regulators should invoke energy efficiency standards to effect a more efficient market outcome that improves the well being of society.

Bill 25 is one such case. The Bill's requirement for the installation of solar hot water (SHW) heaters would result in savings of up to $8,600 per household over the expected life of the equipment compared to a standard grid resistance water heater.

Furthermore, any amendment to allow for gas water heaters should make sure that gas water heaters (GWHs) achieve at least the same emission reductions as SWHs with electricity back up. I say at least because the SWHs are less expensive than IGHs. Currently, the share of renewable natural gas (RNG) in The Gas Company's gas is less than 5%. Using the City's data on the different water heaters, I find that at 5% RNG, IGHs produce about four times as much emissions as SWHs under today's share of renewable powered electricity. As the amount of renewable electricity increases over time with the increasing RPS standards, the share of renewable gas will need to continue to climb. Thus, for an IGH to be on par with a SWH today, the gas must contain around 70% RNG. As the RPS standard increases, the share of RNG would need to increase to around 85% by 2030.

As for the Bill's requirement to make 25% of stalls in newly constructed multi-family facilities over 8 stalls and commercial parking facilities over 12 stalls "EV ready," this requirement will save Oahu renters greatly as it is far less expensive to incorporate EV readiness into a building as it is being constructed rather than retrofitting a building.

This provision will also greatly reduce the cost of Hawaii meeting its clean energy goals.

Mahalo for the opportunity to submit comments in support Bill 25 (2019). In order for the City to cost-effectively meet its emission reductions goals, I urge you to support the Bill as proposed by the Administration.

Kind regards,
Paul Bernstein, PhD

Testimony Attachment	
Accept Terms and Agreement	1

IP: 192.168.200.67

Speaker Registration/Testimony

Name	Steve Chang
Phone	(808) 462-9777
Email	pacificenergyservices@yahoo.com
Meeting Date	09-04-2019
Council/PH Committee	Zoning
Agenda Item	Bill 25
Your position on the matter	Oppose
Representing	Self
Organization	
Do you wish to speak at the hearing?	No

Written Testimony

Aloha ZPY Chair Menor and Committee Members,

I strongly oppose Bill 25 where it requires a gas-powered water heater that is fueled by a source that is not less than 90 percent renewable.

Gas is a clean-burning fuel that provides resiliency against unfavorable weather conditions and power outages. It's not if, but when this happens. In addition, gas provides affordability.

Why would the government impose a requirement on gas water heaters but not on other technologies?

If it is about global warming or climate change, residential homes represents 1% of total emissions for the state, new construction is a small percentage of that. Basically, a sliver of a sliver.

In regards to affordability, gas water heating can be more cost-effective in a 30-year life cycle cost analysis.

As you know, housing and living in Hawaii is already the highest in the nation, we shouldn't make it more expensive.

We should give people the right to choose.

With a balance approach we can achieve our goals and preserve choice, while minimizing disruption and cost.

Thanks for your consideration.

	Kina'ole, Steve Chang
Testimony Attachment	
Accept Terms and Agreement	1

IP: 192.168.200.67

BIA
BUILDING INDUSTRY ASSOCIATION Hawaii

September 4, 2019

Honorable Ikaika Anderson, Chair
Honorable Ann Kobayashi, Vice-Chair
Honolulu City Council Committee o
Honolulu Hale
Honolulu, Hawaii 96813-3077

RE: Bill No. 25 - Relating to The Adoption of the State Energy Conservation Code

Chair Anderson, Vice-Chair Kobayashi, and Councilmembers:

My name is Gladys Quinto-Marrone, CEO of the Building Industry Association of Hawaii (BIA-Hawaii). Chartered in 1955, the Building Industry Association of Hawaii is a professional trade organization affiliated with the National Association of Home Builders, representing the building industry and its associates. BIA-Hawaii takes a leadership role in unifying and promoting the interests of the industry to enhance the quality of life for the people of Hawaii. Our members build the communities we all call home.

BIA-Hawaii is in **opposition** to Bill 25. We have strong concerns with regards to the proposed State Energy Conservation Code (SECC), and how it will impact housing affordability in Hawaii. As you all are well aware, Hawaii has the distinction of being one of the most expensive housing markets in the nation. Constricted supply and high demand have resulted in median prices of homes on Oahu currently reaching a new record of $835,000. Increasing the supply of housing at all price points, and minimizing the cost of housing construction while not compromising public health or safety, has been the focus of BIA-Hawaii over the last few years.

The State Energy Conservation Code (SECC) are not codes that deal with the protection of public health and safety. Rather, these codes are intended to save on energy consumption. While we support the need for energy conservation, there needs to be a common sense and economic assessment of the cost of compliance with these codes. Mandating compliance with these codes as is being proposed in Bill No. 25 would be irresponsible, without first recognizing the impact on housing affordability on Oahu.

The proposed amendments to the State Energy Conservation Code are difficult to understand as it involves the following:

- Review of the 2015 International Energy Conservation Code;
- The state's amendments to the 2015 International Energy Conservation Code, which were adopted as the State Energy Conservation Code in March of 2017;
- The proposed amendments to the State Energy Conservation Code (March 2017) proposed by the State Building Code Council and the Department of Planning and Permitting as Bill No. 25.

The 2015 International Energy Conservation Code has two parts: commercial and residential. Our comments are on the proposed amendments to the residential section of the code.

BIA

An itemized listing of the proposed amendments to the State Energy Conservation Code is provided in attached Exhibit A.

Tropical Zone Code and Jalousie Windows:

Bill 25 Proposed Amendments:

Page 10, (24) (25) Proposed Revisions-- R401 .2.1 Tropical zone. Residential buildings in the tropical zone at elevations below 2,400 feet (731.5 m) above sea level must comply with this chapter by satisfying the following conditions:

1. Not more than one-half of the area of the dwelling unit is air conditioned.

2. The dwelling unit is not heated.

3. Solar, wind or another renewable energy source supplies not less than 90 percent of the energy for service water heating.

4. Glazing in conditioned space shall have a maximum solar heat gain coefficient as specified in Table R402.2.1.

Table R402.2.1. Window SHGC Requirements

Projection Factor of overhang from base of average window sill	SHGC
< 0.30	0.25
0.30 - 0.50	0.40
≥ 0.50	N/A

Exception: North-facing windows with pf > 0.20 are exempt from the SHGC requirement. Overhangs shall extend two feet on each side of window or to nearest wall, whichever is less.

5. Skylights in dwelling units shall have a maximum Thermal Transmittance (U-factor), as specified in Table R402.1.2.

6. Permanently installed lighting is in accordance with Section R404.

7. The roof/ceiling complies with one of the following options:

a. Comply with one of the roof surface options in Table C402.3 and install R-13 insulation or greater; or b. Install R-19 insulation or greater.

If present, attics above the insulation are vented and attics below the insulation are unvented.

Exception: The roof/ceiling assembly are permitted to comply with Section R407.

8. Roof surfaces have a minimum slope of one fourth inch per foot of run. The finished roof does not have water accumulation areas.

9. Operable fenestration provides ventilation area equal to not less than 14 percent of the floor area in each room. Alternatively, equivalent ventilation is provided by a ventilation fan.

10. Bedrooms with exterior walls facing two different direction have operable fenestration or exterior walls facing two different directions.

11. Interior doors to bedrooms are capable of being secured in the open position.

12. Ceiling fans or whole house fans are provided for bedrooms and the largest space that is not used as bedroom.

13. Jalousie windows shall have an air infiltration rate of no more than 1.2 cfm per square foot (6.1 L/s/m2).

14. Walls, floors and ceilings separating air conditioned spaces from non-air conditioned spaces shall be constructed to limit air leakage in accordance with the requirements in Table R402.4.1.1.

BIA Comments and Recommendations on this Section:

While Hawaii falls under the Tropical Zone of the International Energy Conservation Code (IECC), sections of the existing State Energy Conservation Code (SECC) and some of the proposed amendments contained in Bill No. 25 will increase the cost of construction or remodeling a home on Oahu. Thus making housing less affordable to more local residents and families.

For example, the Tropical Zone requires a Solar Heat Gain Coefficient (SHGC) or Efficiency of windows of .25. The SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less solar heat it transmits. Essentially keeping the house cooler. However, in adopting a SHGC of .25, the City and County of Honolulu will essentially eliminate Louver Jalousie Window Systems as an option for homeowners and developers.

Monolithic glass or glass used in louver jalousie window systems, unlike insulated glass (two pieces of glass, air space in the middle, inner pane coated), performs poorly in SHGC performance. The technology to improve the SHGC performance with single pane, monolithic glass to be comparable with insulated glass is not available.

The minimum air leakage of 1.2cfm per square foot for louver jalousie windows is not reasonable nor justified for a passive, naturally ventilated dwelling under the tropical code. The mere design of the louver jalousie window with thick glass blades overlapping a on the adjacent glass blades, providing glass on glass contact is very difficult. Dirt, debris on the glass blades, settling of the dwelling, can all result in out-of-plumb/square openings that will prevent the glass blades from closing properly to comply with the 1.2 cfm per square foot leakage requirement.

The louver/jalousie window was designed and built to provide maximum ventilation within the window opening. There is no surrounding frame around the glass with weather seals to provide an air tight seal when closed like sliding, hung, casement, awning window.

As such, we recommend that Bill No. 25 proposed condition No. 13 be amended to read as follows:

13. Jalousie windows are allowed in the Tropical Zone, and are exempt from the Window SHGH & Air Infiltration Rate Requirements stated in the Tropical Zone.

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BIA

Solar Water Heater Mandate:

Bill 25 Proposed Amendments:

Page 13, (28) New Section--R403.5.5 Solar water heating. Residential single-family buildings shall use solar, wind or another renewable energy source for not less than 90 percent of the energy for service water heating.

Exception: If an architect or mechanical engineer licensed under Chapter 464, of the HRS, attests and demonstrates that installation is impracticable due to poor solar resource or installation is cost-prohibitive based upon a life cycle cost-benefit analysis that incorporates the average residential utility bill and the cost of the new solar water heater system with a life cycle that does not exceed fifteen years, then one of the following technologies advancing renewable energy shall be used for service water heating: 1) a grid-interactive water heater; 2) a heat pump water heater; or 3) a gas-powered water heater that is fueled by a source that is not less than 90 percent renewable. For the purpose of this section, "grid-interactive water heater" means an electric resistance water heater fitted with grid-integrated controls that are capable of participating in an electric utility load control or demand response program.

BIA Comments and Recommendations on this Section:

The proposed amendment effectively eliminates instant gas water heaters, which are an efficient and reliable means of heating water. The cost difference between instant gas water heating vs. solar water heating is approximately $10,000 per home. This cost will be passed on to the home buyer. Furthermore, all solar water systems have an electric back-up heating element. This means that HECO has to size their generation and distribution systems to accommodate this load. Eliminating gas heaters also reduces the incentive for developers to offer gas ranges and other appliances, meaning that these additional loads will have to be accounted for as well.

We suggest that this section be amended to read as follows:

Page 13, (28) New Section--R403.5.5 Solar water heating. Residential single-family buildings ~~shall~~ are encouraged to use solar, wind or another renewable energy source for not less than 90 percent of the energy for service water heating; however, gas water heaters may also be used.

Exception: If an architect or mechanical engineer licensed under Chapter 464, of the HRS, attests and demonstrates that installation is impracticable due to poor solar resource or installation is cost-prohibitive based upon a life cycle cost-benefit analysis that incorporates the average residential utility bill and the cost of the new solar water heater system with a life cycle that does not exceed fifteen years, then one of the following technologies advancing renewable energy shall be used for service water heating: 1) a grid-interactive water heater; 2) a heat pump water heater; or 3) a gas-powered water heater ~~that is fueled by a source that is not less than 90 percent renewable~~. For the purpose of this section, "grid-interactive water heater" means an electric resistance water heater fitted with grid-integrated controls that are capable of participating in an electric utility load control or demand response program.

Mandatory Ceiling Fans:

With respect to Page 13, (29) New Section--R403.6.2 Ceiling fans (Mandatory). A ceiling fan or whole house fan is provided for bedrooms and the largest space that is not used as bedroom.

BIA

We would strongly suggest the Council adopt the language approved by the County of Kauai which reads as follows:

Kauai County Amendment:

"A ceiling fan or ceiling fan rough-in [is] or whole-house fan may be provided for bedrooms and the largest space that is not used as a bedroom."

Mandate for Electric Vehicle Charging Capability:

Bill 25 Proposed Amendments (EV Charging Language currently not in IECC or SECC:
Page 13, (31) New Section--R404.3 Electric Vehicle Capability. In addition to what is required by the Electrical Code, a dedicated receptacle for an electrical vehicle must be provided for each residence which provides at a minimum, Level 1 service.

BIA Comments and Recommendations on this Section:

Most affordable housing projects particularly at the lowest end are multi- family. The proposed amendment requires 25% of multi-family at grade parking areas to be "electric vehicle ready". In addition to the cost of $11,300 per EV-ready stall, this amendment creates a host of other problems.

The 25% requirement seems to be unreasonable considering the current electric vehicle ownership is less than 1% in the entire state (August 9, 2019 Star Advertiser). For multi-family projects, the infrastructure cost (i.e. trenching, conduits, and transformer upgrades) are significant and will be passed on to the homeowner in the cost of the unit.

Parking stalls are conveyed with units. Buyers who want EV-ready stalls may not get them, and buyers who don't want them may have to pay a premium for equipment that they will not use. The stalls will pull power from the unit's panel, so it is permanently attached to the unit. It's already a struggle to meet the minimum parking requirements, so providing extra stalls is out of the question. EV-ready stalls may be ganged in the center of the project, but that leads to other problems, as they will have to be individually metered. That would represent another extra cost to the homebuyer.

Common areas usually benefit all of the residents in the project. EV parking stalls are not considered common areas, and would only benefit those residents who have an electric vehicle. As such, costs associated with construction, installation and upkeep of these EV-ready parking stalls should not be a Common Area Maintenance (CAM) charged to everyone.

If power is pulled from a common circuit, sub meters can be used, however, they will add more cost, and the AOAO will have to read them, billing each homeowner accordingly. Also, these stalls may be far away from the owner's units. The chargers will also need security to prevent unauthorized usage while the homeowner is not using it. Finally, the chargers will most likely be used during peak electric usage hours. The homeowner will come home, plug in their car, turn on their air conditioning, lights, TVs, and start cooking using their electric ranges and ovens. Meanwhile, all the common area lights and streetlights will turn on. The transformers and lines within the development will all have to be upsized to accommodate these loads; costs which also get passed on to the home buyer.

We strongly recommend that multi-family projects with grouped, at-grade parking stalls be excluded from the requirement to provide 25% of multi-family parking be "electric vehicle ready." As such we proposed the following amendment to this section:

BIA

Bill 25 Proposed Amendments, Page 13, (31) New Section--*R404.3 Electric Vehicle Capability. In addition to what is required by the Electrical Code, a dedicated receptacle for an electrical vehicle must be provided for each single family residence which provides at a minimum, Level 1 service. Multi-family and workforce/affordable housing projects (i.e. those priced at 140% and below AMI) are exempt from this provision.*

Summary:

The proposed code changes also increase costs in other areas. Homes will have to be built air tight and blower door tested, new ventilation requirements will require additional fans, changes to the window solar heat gain coefficients increase the cost of windows, additional insulation over steel framing adds material and labor cost.

As Bill No. 25 is being heard, we ask that the Council consider the following as it reviews each proposed amendment:

1. Is the proposed Code something that government would "like" to have or "need" to have?
2. How would the adoption of the proposed code amendments impact housing affordability on Oahu?

The Council is in a position to improve housing affordability by eliminating or suspending code mandates and requirements that do not compromise public health and safety. Adding these unnecessary and costly requirements impacts housing affordability and will prevent more and more Oahu residents from obtaining housing they can afford.

We support energy conservation, and can support adoption of the SECC, **provided** it includes our proposed amendments. We appreciate the opportunity to express our views regarding this matter.

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BIA
BUILDING INDUSTRY ASSOCIATION Hawaii

EXHIBIT A

Existing language from International Energy Conservation Code:

R401.2 Compliance. Projects shall comply with one of the following:

a. Sections R401 through R404.
b. Section R405 and the provisions of Sections R401 through R404 labeled "Mandatory."
c. An energy rating index (ERI) approach in Section R406.

Bill 25 Proposed Amendments:

R401 .2 Compliance. Projects shall comply with one of the following:

4. The Tropical Zone requirements in Section R401.2.1.

Existing language from International Energy Conservation Code:

R401.2.1 Tropical zone. Residential buildings in the tropical zone at elevations below 2,400 feet (731.5 m) above sea level shall be deemed to comply with this chapter where the following conditions are met:

1. Not more than one-half of the occupied space is air conditioned.

2. The occupied space is not heated.

3. Solar, wind or other renewable energy source supplies not less than 80 percent of the energy for service water heating.

4. Glazing in conditioned space has a solar heat gain coefficient of less than or equal to 0.40, or has an overhang with a projection factor equal to or greater than 0.30.

5. Permanently installed lighting is in accordance with Section R404.

6. The exterior roof surface complies with one of the options in Table C402.3 or the roof/ceiling has insulation with an R-value of R-15 or greater. If present, attics above the insulation are vented and attics below the insulation are unvented.

7. Roof surfaces have a minimum slope of 1/4 inch per foot of run. The finished roof does not have water accumulation areas.

8. Operable fenestration provides ventilation area equal to not less than 14 percent of the floor area in each room. Alternatively, equivalent ventilation is provided by a ventilation fan.

9. Bedrooms with exterior walls facing two different directions have operable fenestration or exterior walls facing two directions.

BIA

10. Interior doors to bedrooms are capable of being secured in the open position.

11. A ceiling fan or ceiling fan rough-in is provided for bedrooms and the largest space that is not used as a bedroom.

Existing language in State Energy Conservation Code:

R401.2.1 Tropical zone. Residential buildings in the tropical 2one at elevations below 2,400 feet (731.5 m) above sea level shall be deemed to comply with this chapter where the following conditions are met:

1. Not more than one-half of the dwelling unit is air conditioned

2. The dwelling unit is not heated.

3. Solar, wind or other renewable energy source supplies not less than 90 percent of the energy for service water heating.

4. Glazing in dwelling units shall have a maximum solar heat gain coefficient as specified in Table R402.2.1.

Table R402.2.1. Window SHGC Requirements

Projection Factor of overhang from base of average window sill[b]	SHGC
≤ .30	.25
.30 - .50	.40
≥ .50	N/A

[b] Exception: North-facing windows with pf > .20 are exempt from the SHGC requirement. Overhangs shall extend 2 feet on each side of window or to nearest wall, whichever is less.

5. Skylights in dwelling units shall have a maximum U-factor as specified in Table R402.1.2.

6. Permanently installed lighting is in accordance with Section R404.

7. The roof/ceiling complies with one of the following Options:

- Comply with one of the roof surface options in 'Table C402.3 and install R-13 insulation or greater.
- Install R-19 insulation or greater.

If present, attics above the insulation are vented and attics below the insulation are unvented.

Exception: The roof/ceiling assembly are permitted to comply with Section R407.

8. Roof surfaces have a minimum slope of ¼ inch per foot of run. The finished roof does not have water accumulation areas.

9. Operable fenestration provides ventilation area equal to not less than 14 percent of the floor area in each room. Alternatively, equivalent ventilation is provided by a ventilation fan.

10. Bedrooms with exterior walls facing two different direction have operable fenestration or exterior walls facing two different directions.

11. Interior doors to bedrooms are capable of being secured in the open position.

12. A ceiling fan or ceiling fan rough-in is provided for bedrooms and the largest space that is not used as bedroom.

13. Jalousie windows shall have an air infiltration rate of no more than 1.2 cfm per square foot (6.1 L/s/m2).

14. Walls, floors and ceilings separating air conditioned spaces from non-air conditioned spaces shall be constructed to limit air leakage in accordance with the requirements in Table R402. 4.1.1.

Bill 25 Proposed Amendments:

Page 10, (24) (25) Proposed Revisions-- R401 .2.1 Tropical zone. Residential buildings in the tropical zone at elevations below 2,400 feet (731.5 m) above sea level must comply with this chapter by satisfying the following conditions:

1. Not more than one-half of the area of the dwelling unit is air conditioned.

2. The dwelling unit is not heated.

3. Solar, wind or another renewable energy source supplies not less than 90 percent of the energy for service water heating.

4. Glazing in conditioned space shall have a maximum solar heat gain coefficient as specified in Table R402.2.1.

Table R402.2.1. Window SHGC Requirements

Projection Factor of overhang from base of average window sill	SHGC
< 0.30	0.25
0.30 - 0.50	0.40
≥ 0.50	N/A

Exception: North-facing windows with pf > 0.20 are exempt from the SHGC requirement. Overhangs shall extend two feet on each side of window or to nearest wall, whichever is less.

5. Skylights in dwelling units shall have a maximum Thermal Transmittance (U-factor), as specified in Table R402.1.2.

6. Permanently installed lighting is in accordance with Section R404.

7. The roof/ceiling complies with one of the following options:

a. Comply with one of the roof surface options in Table C402.3 and install R-13 insulation or greater; or b. Install R-19 insulation or greater.

If present, attics above the insulation are vented and attics below the insulation are unvented.

Exception: The roof/ceiling assembly are permitted to comply with Section R407.

8. Roof surfaces have a minimum slope of one fourth inch per foot of run. The finished roof does not have water accumulation areas.

9. Operable fenestration provides ventilation area equal to not less than 14 percent of the floor area in each room. Alternatively, equivalent ventilation is provided by a ventilation fan.

10. Bedrooms with exterior walls facing two different direction have operable fenestration or exterior walls facing two different directions.

11. Interior doors to bedrooms are capable of being secured in the open position.

12. Ceiling fans or whole house fans are provided for bedrooms and the largest space that is not used as bedroom.

13. Jalousie windows shall have an air infiltration rate of no more than 1.2 cfm per square foot (6.1 L/s/m2).

14. Walls, floors and ceilings separating air conditioned spaces from non-air conditioned spaces shall be constructed to limit air leakage in accordance with the requirements in Table R402.4.1.1.

Existing language from International Energy Conservation Code:

R402.3.2 Glazed fenestration SHGC. An area-weighted average of fenestration products more than 50-percent glazed shall be permitted to satisfy the SHGC requirements. Dynamic glazing shall be permitted to satisfy the SHGC requirements of Table R402.1.2 provided the ratio of the higher to lower labeled SHGC is greater than or equal to 2.4, and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps. Dynamic glazing shall be considered separately from other fenestration, and area-weighted averaging with other fenestration that is not dynamic glazing shall not be permitted.

Exception: Dynamic glazing is not required to comply with this section when both the lower and higher labeled SHGC already comply with the requirements of Table R402.1.1.

Existing language in State Energy Conservation Code:

R402.3.2 Glazed fenestration SHGC. Fenestration shall have a maximum solar heat gain coefficient as specified in Table R402.1.2. An area-weighted average of fenestration products more than 50-percent glazed shall be permitted to satisfy the SHGC requirements.

Dynamic glazing shall be permitted to satisfy the SHGC requirements of Table R402.1.2 provided the ratio of the higher to lower labeled SHGC is greater than the or equal to 2.4 and the dynamic glazing is automatically controlled to modulate the amount of solar gain into the space in multiple steps.

Dynamic glazing shall be considered separately from other fenestration, and area weighted averaging with other fenestration that is not dynamic glazing shall not be permitted.

Exception: Dynamic glazing is not required to comply with this section when both the lower and higher labeled SHGC already comply with the requirements of Table R402.1.1.

Bill 25 Proposed Amendments:

R402.3.2 Glazed fenestration SHGC. Fenestration shall have a maximum solar heat gain coefficient as specified in Table R402.1.2. An area-weighted average of fenestration products more than 50 percent glazed shall be permitted to satisfy the SHGC requirements.

Exception: Dynamic glazing is not required to comply with this section when both the lower and higher labeled SHGC already comply with the requirements of Table R402.1.2.

Existing language in State Energy Conservation Code:

Section R403.5.5 Solar water heating. Solar water heating systems are required for new single-family residential construction pursuant to section 196-6.5, HRS.

Bill 25 Proposed Amendments:

Page 13, (28) New Section--R403.5.5 Solar water heating. Residential single-family buildings shall use solar, wind or another renewable energy source for not less than 90 percent of the energy for service water heating.

Exception: If an architect or mechanical engineer licensed under Chapter 464, of the HRS, attests and demonstrates that installation is impracticable due to poor solar resource or installation is cost-prohibitive based upon a life cycle cost-benefit analysis that incorporates the average residential utility bill and the cost of the new solar water heater system with a life cycle that does not exceed fifteen years, then one of the following technologies advancing renewable energy shall be used for service water heating: 1) a grid-interactive water heater; 2) a heat pump water heater; or 3) a gas-powered water heater that is fueled by a source that is not less than 90 percent renewable. For the purpose of this section, "grid-interactive water heater" means an electric resistance water heater fitted with grid-integrated controls that are capable of participating in an electric utility load control or demand response program.

Existing language in State Energy Conservation Code:

R403.6 Mechanical ventilation (Mandatory). The building shall be provided with ventilation that meets the requirements of the International Residential Code or International Mechanical Code, as applicable, or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

R403.6.1 Whole-house mechanical ventilation system fan efficacy. Mechanical ventilation system fans shall meet the efficacy requirements of Table R403.6.1.

Exception: Where mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.

Bill 25 Proposed Amendments:

Page 13, (29) New Section--R403.6.2 Ceiling fans (Mandatory). A ceiling fan or whole house fan is provided for bedrooms and the largest space that is not used as bedroom.

Existing language in State Energy Conservation Code:

R404.2 Ceiling fans (mandatory). A ceiling fan or ceiling fan rough-in is provided for bedrooms and the largest space that is not used as bedroom.

Bill 25 Proposed Amendments:

Page 13, (30) New Section--R404.2 Ceiling fans (Mandatory). A ceiling fan or whole-house fan is provided for bedrooms, provided the whole house mechanical ventilation system complies with the efficacy requirements of Table R403.6.1.

Bill 25 Proposed Amendments (EV Charging Language currently not in IECC or SECC:

BIA

Page 13, (31) New Section--R404.3 Electric Vehicle Capability. In addition to what is required by the Electrical Code, a dedicated receptacle for an electrical vehicle must be provided for each residence which provides at a minimum, Level 1 service.

Existing language from International Energy Conservation Code:

R503.1.1 Building envelope. Building envelope assemblies that are part of the alteration shall comply with Section R402.1.2 or R402.1.4, Sections R402.2.1 through R402.2.12, R402.3.1, R402.3.2, R402.4.3 and R402.4.4.

Exception: The following alterations need not comply with the requirements for new construction provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.

2. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.

3. Construction where the existing roof, wall or floor cavity is not exposed.

4. Roof recover.

~~5. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.~~

Existing Amendment in the State Energy Conservation Code:

5. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during a roof replacement shall meet one of the following:

- R-30 cavity insulation or the cool roof requirements in Section C402.3 for residential buildings.
- R-19 cavity insulation or the cool roof requirements in Section C402.3 for Tropical Zone residentza2 buildings."

6. Surface-applied window film installed on existing single pane fenestration assemblies to reduce solar heat gain provided the code does not require the glazing or fenestration assembly to be replaced.

Bill 25 Proposed amendment:

7. When uninsulated roof sheathing is exposed during alteration, a minimum of two of the following shall be installed:

a. *Energy Star compliant roof covering;*
b. *Radiant barrier;*
c. *Attic ventilation via solar attic fans or ridge ventilation or gable ventilation; or*
d. *A minimum of two exceptions listed in C402.3.*

Footnote: Shake roofs on battens shall be replaced with materials that result in equal or improved energy efficiency.

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TESTIMONY OF RYAN K. KOBAYASHI
GOVERNMENT AND COMMUNITY RELATIONS DIRECTOR
HAWAII LABORERS UNION (LIUNA) LOCAL 368

Hearing: City Council Hearing
Date: September 4, 2019
Place: Council Chambers
Time: 10:00 a.m.

RE: BILL 25 (2019) RELATING TO THE ADOPTION OF THE STATE ENERGY CONSERVATION CODE

Aloha Chair Anderson Vice Chair Kobayashi, and councilmembers,

My name is Ryan K. Kobayashi, Government and Community Relations Director for the Hawaii Laborers Union Local 368. The Hawaii Laborers Union (LiUNA), Local 368 is made up of over 5000 working and retired members across the State of Hawaii and we would like to take this opportunity to offer comments regarding Bill 25 Relating to the Adoption of the State Energy Conservation Code.

Before we get into any commentary we would like to take this opportunity to express our support for an addition to the State Energy Conservation Code, and that is **our support for the addition of masonry and concrete walls** which we feel would improve the code in the areas of energy efficiency and fire safety in Hawaii.

As far as commentary regarding the rest of the code we are concerned that some of the recommendations made in the code could potentially conflict with County policies especially in the area of providing truly "affordable housing" for the resident of Honolulu. There are several areas in the code especially, in the areas of EV charging stations and the requirement for solar water heating that could potentially drive up the cost of building in Honolulu, working against the policy of providing truly "affordable housing,"

Additionally, we feel that the reach of this bill is overbroad as well and alternative ways of implementing such a code should be explored. Things like making the Energy Code an "optional" code to follow, exempting affordable housing projects from the code, or offering "incentives" that would flow down to purchasers or renters to name a few, should all be explored before implementing this code.

Respectfully,

Ryan Kobayashi

Name: **Bo Vosika**
Email: **BoV@zurier.com**
Meeting Date: **September 4, 2019**
Agenda Item: **Bill 25 CD 1 (2019)**
Position: **COMMENT**

Chair Anderson, Vice-Chair Kobayashi, distinguished members of the Honolulu City Council,

My name is Bo Vosika. I work for the Zurier Company, which represents the Rinnai tankless water heaters in Hawaii. **I am offering comments on the current language of Bill 25 CD 1 (2019)** relating to the adoption of the state energy conservation code, **specifically as it concerns the efficiency and low emissions of instantaneous gas water heaters.**

An instantaneous gas heater is a highly efficient, tankless unit that reliably provides instant hot water for homes for their cooking and washing needs. Moreover, an instant gas heater has .95 percent efficiency rating, which means it uses less energy and typically less water than a unit heating a water storage tank.

In addition, an instant gas heater has very low emissions and is a good option to limit the greenhouse gases that contribute to global warming. Instant gas heaters can also run on renewable natural gas, which is currently being produced at a city-owned waste water treatment plant in Ewa Beach on Oahu.

I am in support of clean and sustainable solutions for Hawaii. Instant gas water heaters offer a highly efficient and lower carbon emitting option for consumers in the state. These can also run on renewable natural gas which is being produced today. In closing, I urge you to keep choices for other highly efficient and low-carbon or carbon neutral options available.

Thank you for the opportunity to testify.

From: CLK Council Info
Sent: Wednesday, September 04, 2019 10:02 AM
Subject: Council/Public Hearing Speaker Registration/Testimony

Speaker Registration/Testimony

Name	Chris Johnson
Phone	808-953-8666
Email	Chris.2929@yahoo.com
Meeting Date	09-04-2019
Council/PH Committee	Council
Agenda Item	Bill 25
Your position on the matter	Oppose
Representing	Self
Organization	
Do you wish to speak at the hearing?	No

Written Testimony

I oppose the signing of Bill 25. The use of solar water heating as the primary heating of hot water is both ineffective and inefficient for most single family homes. The use of solar water heating sounds good on paper, but in reality, will not benefit the homeowners and tenants here in Hawaii.

To prove the ineffectiveness and inefficiency of solar hot water heating, let's analyze how solar hot water heating operate. First, circulated cold water (or previously heated hot water) passes through solar panels which are used to heat the incoming cold water. This heated water is then dumped back into the storage tank where it is then recirculated with a pump through the panels. The use of a circulating pump to allow for this process to work is costly for a homeowner's electric bill. One would argue, "well I have solar panels for electricity, so the electricity used for the circulating pump is mitigated to almost zero cost with the panels." Though this may be a true statement, you must remember that not every house has solar panels for electricity which as a result will increase their already astronomical electrical bills.

Second, factor in the time of day in which most homeowners utilize hot water for their daily consumption. For most homeowners, they take showers and wash their hands with hot water prior to sunrise before heading off to work. Since the sun has not risen yet, the use of solar panels for "renewable energy" is completely eliminated. As a result, the heating of the hot water requires the use of heating elements inside the electric water heater which is used to heat the incoming cold water. Knowing this, the homeowner is once again using more electricity resulting in higher electric bills. Same happens in the evening, most homeowners are arriving home well past 5:00pm and then begin their nightly routine of cooking and

washing dishes, as well as possibly showering at night. After 5:00pm is the time of day in which very little to no sunlight is available to take advantage of "renewable" solar water heating.

Third, the use of electric TANK water heaters are inefficient as well. The water temperature inside a tank will loss its ability to retain the water temperature of the thermostat setting. As a result, during the evening, heat loss of the water temperature will result in the heating element to come on to reheat the water to the desired temperature. This causes more electricity to be used throughout the night, which once again, even if you have solar panels, you cannot reap the benefits of "renewable energy" because it's nighttime.

Forth, the upfront cost of installing an electric tank water heater, circulating pump, and solar panels can be well over $8000+ for everything. Ultimately, this installation cost gets passed along to the homeowner whether its a brand new or remodeled home. In the long term, there will be a lot more maintenance costs for both the tank water heater and solar panels for the homeowner. Shouldn't we be trying to find ways to SAVE the homeowner money???

So, what's the solution? Well, with everything mentioned above, I cannot understand how a solar water heating system can be considered a great source and use of "renewable energy". Restricting homeowners to utilize only solar water heating or require them to apply for a variance through an architecture or mechanical engineer seems very unrealistic.

I would strongly encourage the city council to veto Bill 25 and continue allowing homeowners the choice to use natural gas or propane as a source of hot water heating. If a veto is not possible, please consider removing the restricted verbiage, "3) a gas-powered water heater that is fueled by a source that is not less than 90 percent renewable." Natural gas and propane are both clean burning and a great alternative to helping lower a homeowner's utility bill costs.

Thank you for your time and consideration.

Chris Johnson

Testimony Attachment

Accept Terms and Agreement 1

IP: 192.168.200.67

Hawaii Credit Union League
Your Partner For Success
Unite for Good

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Email: info@hcul.org

Testimony to the Honolulu City Council
Wednesday, September 4, 2018
Honolulu City Council Chambers

In Opposition to Bill 25, Relating to State Energy Conservation Code

To: The Honorable Ikaika Anderson, Chair
The Honorable Ann Koabayashi, Vice-Chair
Members of the City Council

My name is Stefanie Sakamoto, and I am submitting this testimony on behalf of the Hawaii Credit Union League, the local trade association for 51 Hawaii credit unions, representing over 800,000 credit union members across the state. We offer the following testimony on opposition to Bill 25, Relating to the State Energy Conservation Code.

While we understand the intent of this proposed legislation, we have some concerns regarding the cost implications of this bill. The cost of doing business, as well as the cost of living in Hawaii, especially on Oahu, is exceptionally high. Local people, many of which are credit union members, are being priced out of our communities. The mission of Hawaii's credit unions has always been to offer low-cost financial services to the community, and bills such as Bill 25 would add significant financial strain on families that are already struggling.

Additionally, we are concerned about the provision in Bill 25 that would require new commercial buildings to have 25% of its parking stalls "electric vehicle-ready (EV-ready)". While we understand the intent of moving towards a "green" Hawaii, this requirement would be difficult to achieve. Currently, credit unions do offer EV chargers and EV-dedicated parking, as required by state law. While making transactions in credit unions, members are able to plug in their EV. However, the majority of transactions in any financial institution are very short – mostly less than 5-10 minutes. A 10-minute charge for an EV is not very beneficial, and requiring 25% of these stalls would not achieve the intent of the measure, and would only further increase the cost of doing business in Hawaii.

Thank you for the opportunity to provide comments.

BILL 25 CD1 (2019) ENERGY CODE PROPOSED AMENDMENTS - ESTIMATED INCREASED COST IMPACTS ON HOUSING*

Based on approximately 4,400 Single Family and Duplex Units (SF) , 8,750 Multi-Family Units (MF) and 3,350 Affordable Rental Unts (AR)

ESTIMATED TOTAL COST INCREASE (7 mandates)	Add'l Cost Per Unit	
Single Family/Duplex Units/Affordable For Sale	$ 26,617.00	
Multi-Family/Affordable Rental Units	$21,705.00	

AIRTIGHT HOUSE; BLOWER DOOR TESTING (SECC)	Add'l Cost	State Energy Conservation Code ("SECC")
Unit Type	Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale	$ 6,995.00	Do we really need "airtight homes" on Oahu?
Multi-Family and Affordable Rental	$ 6,100.00	Is this a Mainland LEED requirement?

VENTILATION REQUIREMENTS (SECC)	Add'l Cost	
Unit Type	Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale	$ 1,400.00	Two speed bathroom fans, always on @ 50 cfm
Multi-Family and Affordable Rental	$ 850.00	ramps up to 80 cfm when lights are turned on.

WINDOWS (SECC)	Add'l Cost	
Unit Type	Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale	$ 200.00	Cost to change from SHGC of .30 to SHGC of .25
Multi-Family and Affordable Rental	$ 175.00	

ADD R-3 INSULATION OVER STEEL FRAMING (SECC)	Add'l Cost	
Unit Type	Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale	$ 4,772.00	Additional insulation wrap to cover steel framing
Multi-Family and Affordable Rental	$ 3,000.00	studs on exterior walls of home.

SOLAR HOT WATER HEATER (over 25 years) vs. GAS WATER HEATER (25yrs)		
Unit Type	Add'l Cost Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale (25 yrs)	$ 7,500.00	$2,500 GWH: $2,500 (25-yr warranty)
Multi-Family and Affordable Rental (25 yrs)	$ -	$10,000 SWH (10-13yr warranty)
		$12,500 SWH ANNUAL MAINTENANCE ($500/yr x 25yr)

Submitted by: David Arakawa

LED LIGHT FIXTURES (SECC)

Unit Type	Add'l Cost Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale	$ 700.00	Cost difference to go all LED. Note that LED fixtures have
Multi-Family and Affordable Rental	$ 280.00	no bulbs to replace, the whole fixture must be replaced.

25% EV CHARGER-READY PARKING STALLS (State EV parking stall requirement is 1%; City's requirement is 0.)

Unit Type	Add'l Cost Per Unit	Comments
Single Family/Duplex Units/Affordable For Sale	$ 5,050.00	Infrastructure upgrade plus outlet in garage; Infrastructure upgrade, plus underground work to open parking lots. CHARGERS NOT INCLUDED.*
Multi-Family and Affordable Rental	$ 11,300.00	Infrastructure upgrade plus underground work to open parking lots. CHARGERS NOT INCLUDED.*

*** Based on quotes from contractors for housing projects**

****Note: Electrical transformers may need to be upgraded due to charging station requirements. It is assumed that homeowners will charge EVs during peak afternoon/evening hours & high demand/rates. Also, electric meters or some way of securing chargers will need to be added, which is not included in this cost estimate.**